GM touts fuel economy gains to ward off CAFE boost

By Jack Keebler
AUTOMOTIVE NEWS STAFF REPORTER

Politicians, the media — and importantly — buyers don't know about General Motors' fuel efficiency. So GM has a team on the road talking about the No. 1 automaker's fuel-economy leadership.

Ronald H. Haas, vice president of current engineering and manufacturing staff, and David Brown, general director, worldwide powertrain and North American vehicle-capacity planning for GM's product planning and economics staff, visited *Automotive News* last week. The purpose of the meeting was to provide evidence of GM's fuel-economy leadership with specific comparisons to competitors' vehicles and explain the corporation's position on current and future corporate average fuel economy standards.

GM builds some of the most fuel-efficient cars and light trucks in the world, according to Haas, who used EPA fuel-economy numbers to make his point.

In the cited EPA examples, GM vehicles frequently had higher fuel economy than the Japanese vehicles that competed in the same EPA size classifications.

Carmakers are concerned about new CAFE legislation in the Senate that threatens to raise car and light-truck fuel economy for each maker by 20 percent in the 1996 model year and 20 percent more in 2001. This threat has domestic, European and Asian makers loudly questioning the technical, social and political reasons for tougher fuel-economy standards.

Haas said the public's confusion about GM's fuel-economy leadership is understandable. Haas admits that for several years the corporation's CAFE has fallen. In 1988, it was 27.6 mpg. In 1990, the company posted a 27.1 mpg CAFE number — tying Chrysler Corp. The 1990 model year was the first that GM failed to meet the government's 27.5 mpg CAFE.

Haas said low-cost gasoline and buyers' desires for larger, higher-performing cars might make meeting CAFE even more difficult in the future.

"While they (GM engineers) can boost the mileage of a particular product, they can't guarantee that consumers will select that automobile over some other offering," said Haas.

Print ads and television commercials for some GM divisions already tout the fuel-sipping quality of the company's vehicles relative to competitors.

Haas also pointed out that Ford Motor Co., which like GM offers a wide range of vehicles, managed only a 26.4 mpg CAFE for 1990.

Critics of the company note that almost all of GM's new-model introductions have been for powerful, luxurious models that generally weigh more than the models they replace. And finally, the company has come under considerable fire recently from environmentalists and politicians in Washington because it not only doesn't support any increase in the current CAFE standard, it vigorously opposes CAFE-type regulations in general.

> "While they (GM engineers) can boost the mileage of a particular product, they can't guarantee that consumers will select that automobile over some other offering."
>
> **Ronald Haas**
> GM vice president

During a question and answer session, Haas attempted to avoid debate about the pros and cons of fuel-economy regulations, emissions benefits from increased fuel economy or about what the company considers a "reasonable" increase in the current standard.

Instead, Haas focused on the progress made since the first energy crisis in the early 1970s. In 1974, the GM fleet fuel economy was 12.0 mpg — compared to 1990's 27.1 mpg. Haas said the investments to effect this change were enormous.

"We've invested billions of dollars to implement and perfect a long list of advanced technologies," said Haas.

Haas outlined the move from carburetors to fuel injection, from rear-wheel drive to front-wheel drive and from heavy body-on-frame to unibody construction. Haas said that in 1981, GM started to use microprocessors to more precisely manage fuel and spark control for lower emissions and better economy.

Haas said some "small-car" makers have consistently achieved higher CAFE numbers than GM. But he noted that none offered as wide a range of vehicles as GM or sold as many vehicles.

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Circle ReaderService #13

Canada sales fall 7.41% in January

By Anne E. Wright
AUTOMOTIVE NEWS CHIEF STATISTICIAN

Sales of cars and trucks fell 7.41 percent in Canada last month, as car sales rose and truck sales dropped sharply.

Total sales of imported and North American-built cars were up 2.26 percent from January 1990, while imported and North American trucks declined 24.02 percent.

Industry officials viewed the car increase as an anomaly caused by a rush of fleet and daily rental business in January. Purchases had been put off until after Jan. 1, when a change in tax laws triggered a drop in vehicle prices.

But the officials said the real picture is reflected in the slumping sales numbers for light trucks. Though interest rates in Canada are falling, the decline has been overshadowed by uncertainty over the Persian Gulf war and recession.

Chrysler reported a strong 31.05 percent increase in North American-built cars. Ford rose 16.02 percent, and General Motors was up less than one percent.

Imported car sales dipped 8.39 percent. Companies boasting increases in imports were: GM, 36.42 percent; Volkswagen, 31.57 percent; Volvo, 12.36 percent; Hyundai, 10.71 percent; and Subaru, 2.17 percent.

Sales of North American-produced trucks were off 23.52 percent. Chrysler's sales dropped 34.82 percent; Ford was down 20.05 percent; and GM declined 15.41 percent.

Imported truck sales fell 27.07 percent. Only two truck importers reported gains in January: Volkswagen increased 53.33 percent and Suzuki 16.52 percent.

Staff Correspondent Alex Law in Toronto contributed to this report.

Missouri jury awards $1.2 million in Chrysler odometer fraud case

ST. LOUIS — A St. Louis County man and his daughter have won a $1.2 million award against Chrysler Corp. over alleged odometer fraud.

Brian Carpenter, 43, was awarded the money by a St. Louis County Circuit Court jury.

The bulk of the award was $1.1 million in punitive damages against Chrysler for its "overnight evaluation program," permitting company executives to drive cars with disconnected odometers before the cars were shipped to dealers.

James Kenyon, a Chrysler spokesman, said the company would appeal.

— The Associated Press

CANADIAN CAR AND TRUCK SALES

JANUARY 1991

	Jan. 1991	Jan. 1990
BMW (import car)	**248**	**250**
Chrysler	**16,137**	**17,710**
N.A. Car	8,387	6,400
Import Car	1,273	1,299
N.A. Truck	6,423	9,855
Import Truck	54	156
Ford	**17,995**	**18,123**
N.A. Car	11,117	9,582
Import Car	432	478
N.A. Truck	6,446	8,063
GM	**29,035**	**30,834**
N.A. Car	19,835	19,721
Import Car**	236	173
N.A. Truck	8,708	10,294
Import Truck	256	646
Honda	**5,206**	**5,929**
N.A. Car	1,054	2,063
Import Car	4,152	3,866
Hyundai	**1,222**	**1,217**
N.A. Car	261	349
Import Car	961	868
Jaguar (import car)	**44**	**108**
Lada	**45**	**74**
Import Car	20	70
Import Truck	25	4
Land Rover (import truck)	**21**	**0**
Mazda*	**2,079**	**2,928**
Car	1,303	1,859
Truck	776	1,069
Mercedes-Benz (import car)	**235**	**283**
Nissan	**1,799**	**2,431**
Car*	1,147	1,403
Import Truck	652	1,028
Peugeot (import car)	**4**	**4**
Subaru (import car)	**471**	**461**
Suzuki	**988**	**920**
Car*	459	466
Import Truck	529	454
Toyota	**4,560**	**5,904**
N.A. Car	908	547
Import Car	2,598	4,064
Import Truck	1,054	1,293
Volkswagen	**2,413**	**1,829**
Import Car	2,367	1,799
Import Truck	46	30
Volvo	**280**	**401**
N.A. Car	80	223
Import Car	200	178
Total Car	**57,792**	**56,514**
N.A. Car	**41,642**	**38,885**
Import Car	**16,150**	**17,629**
Total Truck	**24,990**	**32,892**
N.A. Truck	**21,577**	**28,212**
Import Truck	**3,413**	**4,680**
TOTAL CAR & TRUCK	**82,782**	**89,406**

*Declined to furnish a break down of N.A.-built and imported sales.
**Includes Passport and Saab sales.
NOTE: N.A. sales are cars and trucks built in the United States and Canada.

CALIFORNIA DRIVEN

Looking at the pros and cons of alternative fuels

By Jack Keebler
AUTOMOTIVE NEWS STAFF REPORTER

The world's automakers are running a multibillion-dollar race to bring alternative-fueled and electric vehicles to market.

The new clean-air standards for California are helping push the change. But alternative-fueled vehicles are bound to have broader use as U.S. rules mandate clean fuels in other states and as countries around the world become more environmentally conscious.

As a result, some vehicles powered by such fuels as methanol, compressed natural gas, ethanol, liquid propane gas, hydrogen or electricity are sure to reach showrooms by the end of the decade.

Here's a fuel-by-fuel rundown of their strengths and weaknesses:

Methanol

Methanol is currently the top choice for alternative-fueled vehicles for several reasons.

First, experts say it is even cleaner than such "environmentally friendly" fuels as reformulated gasoline. And second, the most likely feedstock would be inexpensive natural gas.

Advocates claim that at remote oil wells, that gas is currently burned off or simply vented. If methanol became a popular fuel, the gas could be captured and converted to methanol at the well site. That would provide not only a cheap "new" source of energy, it would also eliminate the burning and venting that is a substantial source of greenhouse gasses.

But the long-range hope is that methanol could be made from high-sulfur coal. And America has lots of it.

But coal-derived methanol using present processes would not be cost effective unless crude oil sold for more than $40 a barrel. The current price is about $20. In addition, significant amounts of carbon dioxide, a gas that contributes to global warming, are produced using the present processes.

Other problems with methanol are its low energy density relative to gasoline and the lack of a supply infrastructure. Fuel tanks might have to be twice as large for a methanol vehicle to have ranges equivalent to gasoline-powered vehicles. The federal government estimates the cost of a methanol infrastructure at about $4.5 billion. But petroleum interests say the cost would be closer to $12 billion.

Other minor technical hurdles are methanol's high toxicity, its poor cold-start character, the lack of a visible flame when it burns and its corrosive nature, which would require premium fuel-system components.

Ethanol

Like methanol, ethanol — or grain alcohol — has good energy density and would require only minimal changes to existing powerplants. But it is currently thought to be too expensive. EPA estimates of its "gasoline-equivalent" cost range from $1.47 to $2.07 per gallon.

As for an emissions benefit, preliminary calculations by Ford Motor Co. suggest ethanol and methanol have comparable benefits in curtailing smog.

Although just a handful of vehicles in the United States operate on pure ethanol, the nation produced 840 million gallons in 1988 for use as a motor fuel blend. Ethanol is splash-blended with with gasoline at 10 percent concentration to form gasohol. As such, it is currently the highest volume alternative non-petroleum motor fuel.

Natural gas

The American Gas Association estimates that more than 30,000 natural gas vehicles are operating in the United States. Worldwide, the association reports that more than 500,000 operate in such countries as Canada, Italy and New Zealand.

Compressed natural gas must be kept under high pressure in large heavy tanks to provide sufficient range. But on the positive side, the supply infrastructure is already in place and is expected to get larger.

The emissions benefit would be significant. Reactive hydrocarbons and carbon monoxide emissions are reduced by about 90 percent from present gasoline-powered vehicles. Evaporative emissions — such as the hydrocarbons that escape during refueling — are eliminated. Nitrogen oxide emissions are also reduced.

General Motors has a large compressed natural gas program for three-quarter-ton GMC pickups. The vehicles, engineered by PAS Inc. of Troy, Mich., will be sold through GMC dealers to utilities in Colorado, California and Texas.

Liquid petroleum gas vehicles are already playing a part in the market. But experts at car companies say they will not become a large part of the alternative-vehicles fleet because they provide only marginally better emissions performance, and propane supply is limited.

Hydrogen

Hydrogen is one of the lowest emissions alternative fuels. It is also one of the most abundant elements on Earth. And although they need significant modification, conventional engines can be designed to run on the fuel. Ideally, hydrogen engines would be designed around the fuel.

Unfortunately, the technology to allow on-board hydrogen storage is immature. And vehicles that use hydrogen have poor range. The economics of hydrogen balance on the availability of cheap electricity. Where electricity is inexpensive, the production of hydrogen could be quite economical.

Mercedes-Benz and BMW have research projects on hydrogen-powered vehicles. BMW is experimenting with two hydrogen-powered 735i sedans that use centrifugal supercharger systems. But driveability and range are poor. In addition, the company fuels the vehicles with dangerously cold (-423 degrees Fahrenheit) cryogenic hydrogen that would present a significant safety problem during refueling.

Mercedes has also demonstrated a sedan that runs on hydrogen. It has a 2.3-liter four-cylinder engine with a 9:1 compression ratio. Output is pegged at 105 horsepower, and top speed is 105 mph. But the hydrogen stored has the energy equivalency of only 3.7 gallons of gasoline. And the storage tank weighs almost 800 pounds. That provides a driving range of only 75 miles in urban traffic.

Electric

Electric-vehicle development has been given a strong push by the zero-emissions legislation in California and heavy government and electric-utility funding and lobbying.

But it is important to point out that if the additional electrical energy is produced by burning fossil fuels, the electric vehicle's tailpipe is simply the stack on the generating plant. Power could come from a nuclear plant, but nuclear energy has its own problems in terms of waste disposal. Of course, if the energy were produced by hydroelectric, solar or wind sources, it would be non-polluting.

Advocates of electric power say that vehicles would probably be charged at night when demand is lower and electric rates are cheaper.

The Big 3 have large projects to bring electric vehicles to market soon. Prototypes built with electric-vehicle contractors are currently making the rounds at technical sessions and political power-gathering meetings.

In Europe, Peugeot and Fiat have already sold small numbers of electric vehicles to interested utilities and government agencies.

Electric vehicles still suffer from relatively poor acceleration, extremely limited range relative to other fossil-fuel vehicles and high cost. Fiat's Panda Elettra, which carries two people and has a cruise range of 75 miles, costs $20,000.

In the United States, the domestic makers and the federal government have formed a consortium to seek lighter batteries with higher power densities to increase range.

WORLDWIDE ALTERNATIVE-FUEL FLEETS

Table lists automakers' vehicles using alternate fuels or electric power as reported by individual manufacturers. Most are in internal research programs or with various state and federal agencies.

MAKER	MODEL	FUEL-BATTERY	HOW MANY	WHERE	WHEN
Audi	100 Avant quattro	gasoline-electric	200	Germany	1991
BMW	735	hydrogen	2	internal	1990
BMW	320	sodium-sulfur	10	internal	1990
BMW	520	LPG	4	internal	1983
Chrysler	LeBaron convertible	M85 flex-fuel	10	Calif.	1989
Chrysler	Spirit-Acclaim	M85 flex-fuel	up to 100,000	U.S.A.	1993
Chrysler	Caravan-Voyager	Ni-Fe	4	Calif.	1990
Chrysler	Caravan-Voyager	Ni-Fe	6	Calif.	1991
Chrysler	Caravan-Voyager	Ni-Fe	40	Calif.	1993
Chrysler	Caravan	natural gas-electric	1	Calif.	1990
Fiat	Panda	lead-acid or ni-cad	500	Italy	1990
Ford	4 models	E85	many	Brazil	since 1979
Ford	Escort	M85 dedicated	630	Calif.	1989
Ford	Crown Victoria	Ethanol	2	Canada	1989
Ford	Crown Victoria	Ethanol	2	Calif.	1989
Ford	Crown Victoria	E85 or M85 flex-fuel	240	Calif.	1990
Ford	Crown Victoria	E85 flex-fuel	5	Iowa	1991
Ford	Taurus	E85 or M85 flex-fuel	15	Wash.	1991
Ford	Taurus	E85 or M85 flex-fuel	10	Calif.	1991
Ford	Taurus	E85 or M85 flex-fuel	15	Detroit	1991
Ford	Taurus	M85 flex-fuel	2,500	Calif.	1992-93
Ford	LN7	electric	1	internal	1985
Ford	Aerostar ETX-II	sodium-sulfur	2	DOE	1989
General Motors	Corsica	M85 flex-fuel	20	Calif.	1990
General Motors	Lumina	M85 flex-fuel	25	Wash.	1991
General Motors	Lumina	M85 flex-fuel	280	Calif.	1991
General Motors	Lumina	M85 flex-fuel	2,000	Calif.	1992
General Motors	Lumina	M85 flex-fuel	100	Canada	1992
General Motors	GMC 2500 pickup	CNG	1,000	Colo.-Texas-Calif.	1991
General Motors	HX3	gasoline-electric	1	internal	1991
General Motors	Impact	lead-acid	1	internal	1990
General Motors	Full-size G-van	lead-acid	3	N.C.-Calif.	1990
General Motors	several models	E90 & ethanol	many	Brazil	since 1979
Isuzu	ELF (2-ton) truck	LNG	1	internal	1990
Isuzu	ELF (2-ton) truck	electric	1	internal	1990
Isuzu	ELF (2-ton) truck	electric	3,000	Japan	1994
Mercedes-Benz	280 SE/SEL	methanol	20 to 30	internal	1974
Mercedes-Benz	280 TE wagons	hydrogen	5	internal	1974
Mercedes-Benz	230 TE	lead-acid	1	internal	1974
Mercedes-Benz	small bus	lead-acid	5	internal	1974
Mercedes-Benz	230 TE	nickel-cadmium	1	internal	1982
Mercedes-Benz	300 sedan	hydrogen	1	internal	1986
Mercedes-Benz	190	nickel-cadmium	5	internal	1988
Mercedes-Benz	190	nickel-cadmium	1	internal	1989
Mercedes-Benz	190	nickel-cadmium	6	internal	1990-91
Mitsubishi	Galant	M85 flex-fuel	1	Calif.	1990
Nissan	Sentra	M85	1	EPA	1987
Nissan	Micra	iron-nickel-aluminum	1	internal	1989
Nissan	Sentra	methanol	1	EPA	1989
Peugeot	205 sedan	electric	30	France	1990
Peugeot	J5 delivery van	electric	25	France	1990
Peugeot	Citroen C-15 van	electric	50	Hong Kong	1991
Subaru	Legacy Sport Sedan	M85	1	Japan internal	1991
Toyota	Cressida	methanol	1	Sweden	1983
Toyota	Cressida	methanol	1	EPA	1983
Toyota	Camry	methanol	1	Canada	1985
Toyota	Camry	methanol	1	CARB	1985
Toyota	Carina	methanol	2	EPA-CARB	1986
Toyota	Corolla	methanol	1	EPA	1989
Toyota	Camry	methanol	1	CARB	1989
Toyota	Corolla	methanol	1	CARB	1989
Toyota	Corolla	M85 flex-fuel	1	Calif.	1991
Toyota	Town Ace minivan	nickel-cadmium	3	Japan	1990
Volkswagen	Rabbit	methanol	22	Calif.	1980's
Volkswagen	Rabbit	ethanol	21	Calif.	1980's
Volkswagen	7 models	ethanol	1,624,5??	Brazil	1980-90
Volkswagen	Jetta	M85 flex-fuel	33	Calif.	1991
Volkswagen	Jetta	M85 flex-fuel	1	N.Y.	1991
Volkswagen	Jetta	sodium-sulfur & lead-acid	70	Germany	1991
Volkswagen	Jetta	diesel-electric	10	Hanover, Germany	1991
Volkswagen	Jetta	diesel-electric	40	Switzerland	1991
Volvo	740 wagon	M85 flex-fuel	5	Calif.	1991

CARB = California Air Resources Board; DOE = U.S. Department of Energy; CNG = compressed natural gas; LNG = liquid natural gas

CALIFORNIA

FROM PAGE 1

But those costs are likely to fall as makers gain experience with the technology and as increased production brings economies of scale.

Toyota Motor Sales U.S.A. Inc., for example, sold about 232,720 cars and trucks in California in 1990. If sales stayed at that level, the company would have to sell 23,272 low-emission vehicles in 1994 and twice that many two years later. By the 1998 model year, Toyota would have to sell 4,654 zero-emission vehicles.

California's auto mandates are part of a set of sweeping rules that will attempt to curb pollution by putting limits on everything from bakery emissions to charcoal barbecues. On the transportation side, there are already visible signs of change.

State tests vehicles

Twenty-three California gas stations are now equipped to pump methanol. Drivers will be able to fill 'er up with the alternative fuel in about 70 locations by the end of 1992.

> "We're going to let the market decide which fuel, or fuels, will be the best."
>
> **Jananne Sharpless**
> Calif. Air Resources Board

Major oil refiners have formed cooperative research groups to give reformulated gasoline a chance to meet some of the clean-fuel requirements. They're also doing extensive proprietary research on their own.

Many fleets operating in the state have already converted all or part of their fleets to alternative-fueled vehicles. Organizations ranging from the Garden Grove Unified School District (methanol) to the Claremont Police Department (propane) are using vehicles that run on clean-burning fuel.

Eight manufacturers have sold or donated 435 vehicles to the California Energy Commission, which is running clean-fuel demonstration programs throughout the state. Another 5,246 vehicles have been promised by 1994.

The programs are important because they offer a controlled setting in which consumer reaction to alternative-fueled vehicles can be monitored.

J. Ferron, a partner at J.D. Power and Associates in Agoura Hills, Calif., says that sooner or later, those types of vehicles will have to be sold to consumers on Main Streets around the country. And automakers will have to design them to do more than just meet the rules.

"If manufacturers meet the regulations and miss the market — I mean cars that don't appeal to consumers — then the market could go away," Ferron says.

Fleets are first

Initially, fleet sales will provide automakers a ready market to sell low-emission vehicles. But eventually, those vehicles will have to survive on their own in the marketplace, Ferron says.

"Fleets can't eat up all these cars. At some point, they're going to have to go to buyers like you and me," he says. "This is going to take a lot of coordination and cooperation between regulators, manufacturers and refiners."

Jerry Martin, a spokesman for the Air Resources Board, admits that there are no guarantees that consumers will embrace alternative-fueled vehicles. But he says that many of the regulations can be met with current technology. "Until we get to electrics, gasoline will probably still be the primary fuel, so the cars will look and feel the same, and there won't be any big adjustment for consumers," he says.

Martin adds that automakers, oil companies and state agencies are studying "market incentives," like tax breaks and price cuts, to help spur sales of clean cars.

But Greg Dana, vice president and technical director of the Association of International Automobile Manufacturers, says, "The question of consumer acceptance is a big one. We sell what customers buy. So any situation where a car is degraded in terms of performance, handling, range is a threat to sales.

"We think that electric cars are the worst case. We just don't think that people will buy them."

As it is, the California rules don't spell out what fuels will be used. But the Air Resources Board requires oil companies to provide enough to supply the fleet of vehicles it's asking manufacturers to build and sell.

Jananne Sharpless, chairwoman of the Air Resources Board, says she's glad no one fuel or vehicle-type has grabbed the spotlight yet.

"When we started this, a lot of people thought it would be best to look at all the pros and cons of various fuels and pick the best one," she says. "What we're doing instead is establishing a performance standard and letting all the fuels compete. We're going to let the market decide which fuel, or fuels, will be the best. And what vehicles are needed to run on those fuels."

Methanol wins support

She admits that there will be "winners and losers," but says she can envision a fueling station of the future where a number of fuels are offered side-by-side.

The board's rules require that a clean fuel be available when 10,000 vehicles that run on the fuel are expected to be put into operation in Southern California, or 20,000 statewide.

For the initial stages, only "major fuel companies" — those that have refining capacity of 50,000 barrels a day and 25 service stations — would have to provide the necessary fuels.

So far, methanol appears to be the fuel of choice, at least as judged by the number of manufacturers responding to the California Energy Commission clean-fuel demonstration program and the number of cars involved.

It's unclear whether methanol is clean enough to meet the more stringent standards, but because of its compatibility with gasoline in both delivery and use, many manufacturers want to test its limits.

"We've been very pleased with methanol thus far," says John Schutz, director in charge of emissions and powertrains for Nissan Research and Design in Gardena, Calif. "The best things about it are its performance characteristics and the fact that the modifications you have to make to the automobile are virtually invisible to the consumer."

Another plus for methanol: Federal corporate average fuel economy legislation gives some breaks to manufacturers operating alternative-fueled vehicles. Because many manufacturers are struggling to meet CAFE requirements and it's relatively easy to make a regular car methanol-compatible, many are jumping to methanol first.

Ford Motor Co., which is the largest participant in the California Energy Commission's methanol-vehicle program, is actually doing even more work with reformulated gasoline. "Our approach is to see just how far we can expand our capabilities with reformulated gasoline and with current vehicle types," says Mike Schwarz, Ford's manager of emission control analysis. "We want to see how low can we go, how clean can we get."

> Fleets can't eat up all these cars. At some point, they're going to have to go to buyers like you and me.
>
> **J. Ferron**
> J.D. Power and Associates

Schwarz says reformulated gasoline may be able to meet every low-emission standard short of the 1998 zero-emission requirement.

Several fuels studied

Ford has joined with General Motors, Chrysler Corp. and 14 oil companies to study the potential of reformulated gasoline and to compare it to alternative fuels.

"We didn't end up with gasoline by accident," says Schwarz. There are a number of properties it has, and it has alone."

Arco spokesman Douglas Elmets says his company is currently studying several reformulated gasoline "recipes" that are as clean or cleaner than M85, the mixture of 85 percent methanol and 15 percent gasoline that is held up as an industry standard for burning clean and offering optimum performance. Most automakers are studying compressed natural gas, propane, ethanol and electricity and other energy sources as well as methanol and reformulated gas. Most of them are currently operating various vehicle types in their internal test fleets. (See chart on Page 32.)

The vehicles that have been donated to the California Energy Commission are fuel-flexible, meaning they can run on combinations of conventional gasoline and methanol, or exclusively on either fuel.

The commission gives the vehicles to other agencies and private companies to use in order to gather information about how the low-emitting cars and trucks perform.

Manufacturers that donate vehicles get credits that can be used toward satisfying CAFE standards. They also get access to research data that compares their products to others being tested, and they get the "public relations benefit" of being in the program, according to a commission spokesman.

Ford and GM have provided 410 of the 435 vehicles so far. Volkswagen, Nissan, Chrysler, Toyota, Mitsubishi and Mazda have also participated. The Energy Commission currently has commitments for another 5,246 vehicles to be delivered by 1994. Volvo, Mercedes-Benz, Porsche, Suzuki and Honda have also "expressed interest" in the program.

CALIFORNIA CLEAN AIR REQUIREMENTS

California's new rules require an increasing percentage of an automaker's fleet to meet progressively tighter emissions standards. For example, by 2003, 75 percent of sales must have low emissions, 15 percent ultra-low emissions and 10 percent zero emissions.

Model year	0.39 HC 7.0 CO 0.4 NOx	To 50,000 miles 0.25HC, 3.4CO, 0.4NOx To 100,000 miles .31HC, 4.2CO, 0.4NOx	Transitional low-emission vehicles 0.125HC, 3.4CO, 0.4NOx	Low-emission vehicles 0.075HC, 3.4CO, 0.2NOx	Ultra-low emission vehicles 0.040HC, 1.7CO,0.2NOx	Zero-emission vehicles 0 OHC, 0 OCO, 0 ONOx
2003				75	15	10
2002				85	10	5
2001				90	5	5
2000				96	2	2
1999		23		73	2	2
1998		48		48	2	2
1997		73		25	2	
1996		80	20			
1995		85	15			
1994	10	80	10			
1993	60	40				
1992	100					
1991	100					

Figures for exhaust standards are in grams per mile; HC = hydrocarbons; CO = carbon moNOxide; NOx = nitrogen oxide

How California rules will work

By Kristine Stiven Breese
AUTOMOTIVE NEWS STAFF REPORTER

California's new clean air laws create four different categories of clean cars and a timetable for introducing them.

The vehicles are called "transitional low-emission vehicles," "low-emission vehicles," "ultra-low emission vehicles," and "zero-emission vehicles." They will appear in stages between the 1994 and 1998 model years.

The rules will supersede national emission standards mandated under last year's Clean Air Act.

By 1996, for example, the federal Clean Air Act says U.S. cars must reduce hydrocarbon emissions from 0.41 gpm to 0.25 gpm. California already has a 0.39 gpm standard; it will fall to 0.25 gpm for 80 percent of a maker's car and light-truck fleet by 1996. And the remaining 20 percent will have to meet a more-stringent "transitional low-emission vehicle" standard of 0.125 gpm.

By 2003 in California, 75 percent of a maker's cars and light trucks will have to meet even tougher 0.075 gpm "low-emission vehicle" standard. For the balance, the California rules will become more stringent again, including 10 percent with "zero" emissions. Those most likely will be electric vehicles.

Similarly, carbon monoxide and nitrogen oxide emissions will become progressively stricter in California, while elsewhere in the nation they remain level at current California standards until model year 2003. If the EPA says it is necessary, national standards would become stricter then.

Several states, including New York and Massachusetts, have taken steps to adopt California air standards. Federal rules allow such a move as long as states give two years notice. In New York, the plan has been challenged by the Motor Vehicle Manufacturers Association and the Association of International Automobile Manufacturers.

California regulations also include more stringent "in-use" requirements, new on-board diagnostic standards and tougher evaporative emission standards.

Beginning in 1993, 40 percent of the new car and light-truck fleet in California will have to meet emission standards for 100,000 miles, instead of 50,000 miles. Heavier trucks will have a 120,000-mile requirement. Similar rules for the 50,000-to-100,000-mile period will also take effect nationally between 1994 and 1996.

By 1996, all cars sold in California will have to have diagnostic equipment on board which will be able to monitor and locate emissions from 17 different sources, such as the engine block and radiator. Only three sources are monitored currently.

The Air Resources Board is also tightening evaporative standards. Non-tailpipe emissions are currently measured when the car is idling at 67 degrees. By 1998, all vehicles will have to pass in a 105-degree environment.

EXPORT

FROM PAGE 1

don't think it will ever sell many copies here."

But even considering such constraints, the Big 3 seem to be falling far short of what common sense says a dedicated export push should be yielding.

Despite individual successes, neither General Motors nor Chrysler Corp. — by far the export leader — managed to attain even the modest sales targets they had set for 1990. And Ford Motor Co.'s export efforts were so piecemeal and disjointed that company executives could not say with any accuracy what their 1990 sales were.

- GM's European export sales totalled 14,290 units in 1990. That was up 9.5 percent from 13,045 in 1989 and 35.7 percent from 10,528 in 1988, but it was far short of the modest 27,000 target for 1990.
- Chrysler's sales rose 5 percent last year, to 41,038 cars, minivans and Jeeps, far below its projection of 55,000. Chairman Lee Iacocca has said European sales will reach 100,000 a year by the mid-1990s.
- Ford, reflecting its fainthearted commitment to exports, reported sales of only 1,815 cars and 1,806 trucks through September; company officials said they did not know full-year sales. In 1989, Ford sold 2,083 American Ford cars and 2,185 trucks in Europe.

Credibility problem

All three companies continue to insist that better days lie ahead as more dealers are added and as European perceptions of U.S. quality and engineering change.

GM, which sold a record 35,000 U.S.-built cars in Europe in 1979, revived its export ambitions four years ago, after the dollar weakened against local currencies. But Gary Meteer, who arrived in January 1989 as executive director for European activities, has had to convince dealers across Europe that GM won't retreat again if exchange rates fluctuate.

"They've seen a lot of Gary Meteers over here," he says. "We spent about 15 months redeveloping credibility."

Although sales have increased, GM is still far below target. Meteer cites tax law changes in Sweden and Finland that cut into healthy sales of large vans and the slow process of getting several key models certified for all markets.

GM will add the Pontiac Trans Sport SE; four-door Grand Prix, Bonneville, Park Avenue and Corsica; four-door Blazer; and several Cadillac models to its Europe-wide lineup this year after winning type certifications from the European Community. Some of the models were sold last year under specific single-country exemptions.

Prices are high

About 1,800 Trans Sports were sold on that basis last year, principally in Austria, Switzerland and Germany. With EC-wide certification, Meteer projects about 4,000 sales this year.

But the Trans Sport has been knocked in some European comparison tests for substandard fit and finish, dated technology in the form of a three-speed automatic and hefty price.

Price could be a major disincentive. The minivan sells for 53,000 marks (about $36,500) in Germany, nearly double its U.S. base price of $18,889 and about $8,000 more than a similarly equipped Renault Espace ($28,600) and a comparable Toyota Previa ($28,900).

Similarly, the high-end Park Avenue, which carries a 1991 base price of $27,420 at home, will be tagged at 70,000 marks, or about $48,200, in Germany. That pits the Buick against the BMW 7 series and the Mercedes 300 series.

One analyst says the U.S. carmakers are pricing their cars on the wrong basis for Europe.

"Typically, these cars are priced for the U.S., and sales in Europe have every possible add-on, such as homologation, amortized onto a small number of vehicles," said Karl Ludvigsen, a former Ford of Europe executive who now heads his own research firm in London.

"That isn't what the big players do. They don't price on a cost basis, they price on a market basis. You've got to price for the local market."

Meteer, saying that GM is locked-in on prices because of the limited number of options it can offer on its cars in Europe, predicts that sales will rise to about 25,000 vehicles this year — despite the general downturn in Europe.

"We're entering France, Italy and Spain, and we will have the benefit of a substantially expanded dealer organization in Germany," he says. "It is still not as large as we'd like it, but we'll have 52 dealers active for 12 months. Last year we had 27."

GM had previously set a target of 60,000 units by 1993, and Meteer said that remains his objective.

Why Chrysler missed

Meanwhile, Chrysler Corp. says it failed to meet its target last year because of extraordinary factors, such as dealer uncertainty over the company's talks with Italy's Fiat Group, but expects to get back on track in 1991.

"We didn't do as well in Germany as we might have done," said Michael O'Mara, sales manager for Chrysler in Europe.

Sales in Germany fell 2 percent, to 10,396, last year — even as the dealer network was being expanded and the overall German market was soaring to a record.

Severe product critiques in the influential German motoring press also have hurt.

Sales of Chrysler's best-selling model in Europe, the Jeep Cherokee, fell 13 percent last year, to 16,392. The second-best seller, the Voyager, rose 53 percent, to 11,943.

O'Mara blamed lower Cherokee sales on reduced diesel demand, but he said the 4-liter Jeep Wrangler is proving more popular than expected.

Wrangler sales last year totaled 4,183 units, followed by Saratoga (LeBaron sedan), 2,274; LeBaron convertible, 2,201; and LeBaron, 1,345.

After Germany, Chrysler's next biggest market is France, where Jeep is distributed by Renault. Combined Jeep and Chrysler sales last year totaled 9,849. Switzerland was next at 4,863, followed by Belgium, 3,094; Holland, 2,962; and Austria, 2,121.

Chrysler's dealer network throughout Europe is continuing to expand, up to 1,021 from 801 at the end of 1989.

Ford bets on Probe

Ford takes a much less strategic approach to sales of American cars in Europe — its national sales organizations have traditionally set up their own import agreements.

But the big test will come this year in Germany, where Ford of Germany is pitting the Ford Probe in its mainstream lineup against GM's home-grown Opel Calibra. Plans call for selling about 6,000 Probes in Germany, almost three times the number of American cars Ford sold in all of Europe last year.

The Probe, Taurus and Mercury Sable are Ford's main American sellers in Europe. The Aerostar is its best-selling U.S. commercial vehicle in Europe.

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Circle ReaderService #45

Honda is top-selling U.S. import in Japan

By Lindsay Chappell
AUTOMOTIVE NEWS STAFF REPORTER

More aggressive marketing by the Big 3 and increased shipments from Japanese transplants boosted sales of U.S. auto exports in Japan 50 percent last year.

Combined sales of U.S. exports totaled 28,602 units in 1990, up from 19,084 in 1989 and 14,511 in 1988. Last year's volume was the highest ever. But the gain still left U.S. automakers with less than one-half of 1 percent of Japan's new-car market.

Before 1989, the highest export volume to Japan was 16,739 in 1979. Throughout most of the 1980s, the number averaged about 4,500 cars a year.

Ironically, the best-selling U.S.-made car in Japan last year was the Honda Accord, built by Honda of America Manufacturing Inc. in Ohio. It was the third consecutive year that the Accord has been tops in sales. The company shipped 7,534 Accord coupes to Japan last year, up from 4,697 in 1989.

Another Japanese transplant vehicle, the Illinois-built Mitsubishi Eclipse, chalked up 2,886 sales in Japan last year, making Mitsubishi the fourth largest exporter of U.S. cars to the country.

Ford Motor Co. sold 6,030 units. More than one-third of them were Ford Probes, built by Mazda Motor Manufacturing (U.S.A.) Corp. in Flat Rock, Mich.

General Motors' combined exports to Japan were 8,513, up 17.7 percent from 1989's volume of 7,231. The top-selling GM makes were Chevrolet, with 3,637, and Pontiac, with 2,745. Big sellers for GM in Japan included the Chevrolet Camaro, Pontiac Grand Am and Cadillac Fleetwood.

Chrysler Corp. experienced its highest Japanese-export volume in history, with 1,432 sales last year. In 1990, Chrysler arranged for some 700 Japanese Honda dealers to begin stocking Chrysler's Jeep products. Among Chrysler cars, the LeBaron convertible and Imperial were the best sellers.

The recent appreciation of the yen could create still more opportunity for U.S. exporters, said Kazuhiko Morisaki, director of automotive affairs with the Japan External Trade Organization in New York. The yen's rise of nearly 20 percent against the dollar during the past year should allow Japanese distributors to soften prices.

At the same time, the appreciation of the German mark against the yen will swing some Japanese import-buyers away from German cars in favor of U.S. products, he predicted. German makes outsold U.S. competitors in Japan by more than 5 to 1 last year. But sales of German cars in Japan declined 12 percent, to 6,659, in January 1991, compared with January 1990. Sales of U.S. vehicles rose nearly 80 percent to 1,308 in January, according to the Japan Automobile Importers Association.

The association counts cars and some sport-utilities in its totals.

U.S. plants are increasingly targeting the booming Japanese market, which saw a 68 percent increase in large-car sales last year.

Saturn Corp. announced that it will export to Japan, although no firm date has been given.

Honda is preparing its new Ohio-made Accord station wagon for export to Japan, with plans to sell about 5,000 there this year. The company expects total Accord exports to exceed 10,000 for the year.

Toyota Motor Manufacturing U.S.A. Inc. has said it will export about 2,000 U.S.-made Camrys to Japan this year.

MADE FOR JAPAN

Top-selling U.S.-built vehicles in Japan, by company, in 1990.

1. General Motors	8,513
2. Honda	7,534
3. Ford*	6,030
4. Mitsubishi	2,886
5. Chrysler	1,432

*Includes 2,637 Ford Probes, manufactured by Mazda.
SOURCE: Japan Automobile Importers Association

INCENTIVE WATCH
CUSTOMER INCENTIVES

	Rebates	Expiration Date
Chrysler Corp. (1989-90)		
Chrysler	$500-2,000	3/31
Dodge cars	$700-1,500	3/31
Dodge trucks	$500-2,500	3/31
Eagle	$700-1,500	3/31
Jeep	$500-2,000	3/31
Plymouth	$700-1,000	3/31
All minivans	$1,000	3/31
Finance rates in lieu of rebate start at 5.9 percent.		
Chrysler Corp. (1991)		
Chrysler	$500-1,000	3/31
Dodge cars	$500-1,000	3/31
Dodge truck	$300-1,500	3/31
Eagle	$400-700	3/31
Jeep	$700	3/31
Plymouth	$400-1,000	3/31
All minivans	$500	3/31
Finance rates in lieu of rebate start at 5.9 percent.		
Ford Motor Co. (1990)		
Ford Festiva	$700	2/28
Ranger	$1,500	2/28
All Lincoln	$1,500	2/28
Ford Motor Co. (1991)		
Ford Escort, Festiva	$500	2/28
Ranger	$1,000	2/28
Mercury Tracer	$500	2/28
Grand Marquis	$1,000	2/28
Finance rate, in lieu of rebate, starts at 7.9 percent for 48 months or less.		
General Motors (1990)		
Buick Reatta*	$2,000	4/7
Other Buick*	$250-1,000	4/7
Cadillac	$1,200	4/7
Chevrolet Geo	$300-800	4/7
Corvette	$3,000 (GM employees)	4/7
Other cars	$400-750	4/7
Trucks	$500-1,500	4/7
GMC	$500-1,500	4/7
Oldsmobile	$750-1,250	4/7
Pontiac Bonneville	$400-1,000	4/7
*Based on option package selected All makes except Cadillac offer cut-rate financing in lieu of rebates.		
General Motors (1991)		
Buick Reatta	$2,000*	4/7
Other Buick	$250-1,000*	4/7
Cadillac Brougham	$1,500	3/31
Chevrolet Geo	$300-800	4/7
Corvette	$3,000 (GM employees)	4/7
Other cars	$400-750	4/7
Trucks	$500-1,000	4/7
GMC	$500-1,000	4/7
Oldsmobile	$500-1,000	4/7
Pontiac	$400-750	4/7
*Based on option package selected		
Hyundai (1991)	$500-1,575	4/3
Mazda (1990)		
Cars	$750-1,500	2/28
Trucks	$886-1,250	2/28
Subaru		
Justy ECVT (1990-91)	$500	5/2
Loyale (1991)	$300-$1,050	3/4
Toyota (1991)		
Celica GT, 4Runner	$800 discount on options	10/1

INCENTIVE WATCH
DEALER INCENTIVES

	Rebate	Expiration Date
Chrysler Corp. (1990)		
Dodge Ram D-W, Club wagon, Ramcharger	$1,000	3/31
Jeep	$400-3,000	3/31
Chrysler Corp. (1991)		
Colt, Summit	$400-700	3/31
Dodge Trucks	$1,000	3/31
Jeep	$400-3,000	3/31
Ford Motor Co. (1990)		
Ford Taurus SHO	$3,000	2/28
Other cars	$800-1,500	2/28
Ford Bronco	$2,000	2/28
Other trucks	$900-1,100	2/28
Mercury Topaz	$800	2/28
Sable	$1,100	2/28
Cougar	$1,200	2/28
Grand Marquis	$1,500	2/28
All Lincoln	$2,000	2/28
Ford Motor Co. (1991)		
Ford Taurus SHO	$1,000	2/28
Crown Victoria	$750	2/28
Other cars	$100-700, based on sales	2/28
Ford trucks	$100-700, based on sales	2/28
Mercury Topaz, Cougar, Sable	$100-700, based on sales	2/28
General Motors (1990-91)		
Corvette	$1,000-3,000, quota	4/7
Chevrolet C1500	$500	4/7
Pontiac 1990*		
6000, Trans Sport	$400	4/7
Grand Prix, Bonneville	$1,000	4/7
*Rebate increased by $1,000 if dealer gives up rebates on 1991 models.		
Pontiac 1991		
Sunbird, Trans Sport	$400	4/7
Acura (1990-91)		
Integra	$300	4/2
Audi (1991)	$1,500-4,000	2/28
Honda (1990-91)		
Accord	$300	3/31
Hyundai		
1990 models	$1,000-2,000	4/3
1991 Sonata	$100-500, quota	4/3
Isuzu (1990-91)		
Trooper, Pickup	$600-1,700, quota	3/31
Mitsubishi (1990-91)		
Cars, trucks	0-$2,000, quota	2/28
Nissan (1990)		
Pathfinder	$1,500	4/2
Nissan (1990-91)		
Stanza	0-$1,500, quota	4/2
Pickups	$1,200	4/2
Peugeot (1990)	$2,000	None
Subaru		
XT (1990-91)	$2,000	5/2
Legacy (1991)*	$500-1,700	5/2
Loyale (1990)	$800-1,500	5/2
*$1,000 extra on 1990 Legacys.		
Suzuki (1990-91)		
Swift	$400-1,000	4/3
Sidekick	$1,000-2,000	4/3
Toyota (1989-91)		
Corolla and Camry	$200-1,000, quota	4/3
Celica	$200-1,500, quota	4/3
Trucks	$200-1,000, quota	4/3
Volkswagen (1990)		
Cars	$500-1,500	None

CUTS

FROM PAGE 2

the company has confirmed only two of those reductions. Chrysler had 31,200 salaried workers when it began the most recent cost-cutting crusade.

Chrysler is by no means alone. General Motors plans to cut its white-collar employment by 15 percent to 85,000 as part of its broad cost-cutting plan announced earlier this month.

David McCammon, Ford Motor Co. vice president and treasurer, said earlier this month that Ford, too, has a program to reduce its salaried workforce. He said attrition will account for a 4 to 5 percent reduction and special early retirements a similar amount. McCammon said there probably will be salaried layoffs on top of that.

During a press conference last month, Chrysler Chairman Lee Iacocca made it clear that further personnel cuts were likely, but he stressed that engineers will not be on the chopping block.

He indicated that the company is closely monitoring its 6,000-member engineering department to assure that specialized employees are not defecting to other companies.

"We certainly aren't hitting the engineering fraternity," Iacocca said. "You can't ask them to keep all these all-new product programs on schedule and then say, 'Do it with half the engineers.' "

Chrysler is in the midst of a $15.6 billion five-year capital spending program.

To achieve the personnel cuts, Iacocca said, the company is attacking staff and management ranks.

"We knocked the hell out of staffs to be honest with you," Iacocca said. "And I still think we have too many layers of management. The hierarchy is still too strong. We will attack that one more time."

Chrysler has been trying to downsize its management ranks and to reduce management layers since 1988.

Chrysler also spent the latter part of the 1980s trying to shake off the effect of acquiring American Motors Corp. in August 1987. Personnel cuts have been a way of life at Chrysler since that time.

Iacocca said then it was unclear if layoffs could be avoided in this round of white-collar cuts.

"You hope you can do this the painless way, through attrition or some early buyouts and early retirements," he said. "But it could be that in the condition we're in now, we may have to lay off some people. But I don't think it will be a helluva lot of people."

CHRYSLER

FROM PAGE 2

ditional details, but sources within the company said workers are being given a three-year sweetener. For example, a 53-year old worker would retire with the benefits of a 56-year old worker.

The voluntary termination incentive program includes cash based on years of service and up to six months of health care coverage. The *Chrysler Times* article also said that workers will be offered "a choice from several Chrysler vehicles," which will be given to them outright as part of the buyout.

John Miller, president of UAW Local 412, an amalgamated local that includes 21 units of salaried Chrysler employees, said his local has been notified of Chrysler's intent to offer UAW salaried workers special early retirement and voluntary termination incentives.

"This is not a reopening of negotiations," Miller said. "It is activation of part of the national agreement."

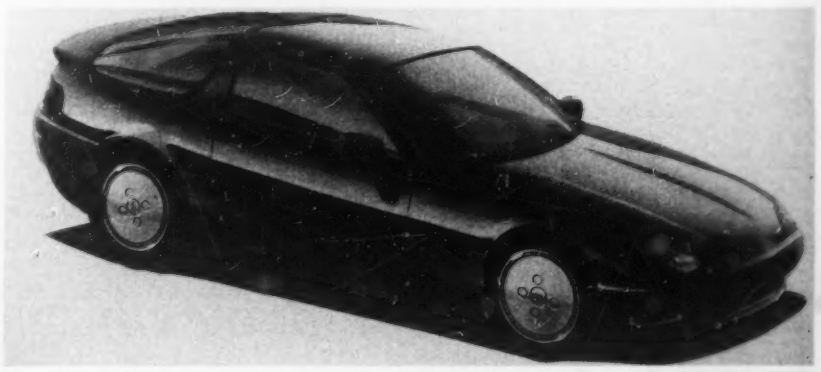
Miller said he expects the 21 salaried Chrysler units, which include about 2,000 workers — designers, engineers and technical staff at various Chrysler facilities — to be little affected by Chrysler's move. Miller said his units already have been reduced in size, and few additional employees are likely to leave voluntarily. "My best guesstimate is we're down about one-third since 1988," he said. "I don't expect an impact at all."

Like UAW hourly workers, members of the salaried UAW units are covered by a Salaried Workers Employment Security System mandated by the national Chrysler/UAW agreement. That system prohibits worker layoffs. Instead, employees are transferred to a job bank and receive a new assignment.

It will not be clear how many non-union salaried Chrysler workers will be laid off until the April 30 deadline for voluntary departures.

"Just how many will depend on the success of the voluntary programs and normal attrition," St. John said in the *Chrysler Times* article.

"The bottom line is that, with our plants running at about 50 percent capacity, we're left with no choice but to bring program and people costs in line with what the business can support."



Mazda will unveil its new MX-3 sports coupe, bound for the U.S. market as the Galaxy.

HIDDEN IMAGE NANS E. LEHMANN

GENEVA

FROM PAGE 3

cut drag coefficient to 0.32 from 0.34, a modified interior and a V-6 engine from the Renault 25.

The Espace has long been Europe's best-selling minivan, with sales rising from 18,173 in 1986 to 46,257 last year.

Renault also will show a restyled Alpine A610 Turbo sports car, with output from the 3.0-liter V-6 increased to 250 hp.

Ford Motor Co.'s Jaguar unit will show a restyled XJ-S coupe and convertible with an updated front and rear appearance.

Alfa Romeo will present a 164-based coupe prototype that some reviewers have likened to the Batmobile. Alfa also will introduce a new version of the 33 subcompact with permanent all-wheel-drive.

Two Volkswagen show cars are expected — a two-seat proposal in beach buggy mode with cutaway doors from the Wolfsburg central design department and a sporty compact from the Art Center design school in Vevey, Switzerland.

Both models, based on the Golf, reflect a way of thinking recently described by VW Chairman Carl Hahn in a German television profile as "short and fun. . .and not too fast."

No decision has been made on whether to build the cars.

The most important introductions of 1991 will be the replacements for Europe's two best-selling cars — the Golf and General Motors' Opel Kadett/Vauxhall Astra. Although neither will debut until the Frankfurt show in September, GM almost certainly will flash photos of its new car, to be called the Astra throughout Europe, during its Geneva press conference.

GM's Adam Opel unit will show the Frontera, an awd sport-utility based on the Isuzu Rodeo that is built by Isuzu-Bedford Co. in England. When it goes on sale in Europe this fall, the Frontera will be available in two body styles, a two-door sport version with a shorter wheelbase and a four-door.

From Japan, Mazda Motor Corp. will unveil the MX-3, a small front-wheel-drive coupe powered by a 1.8-liter V-6 engine, to be sold in the United States as the Galaxy.

Mitsubishi Motors Corp. will roll out its new Pajero off-road vehicle, widely believed to be the basis for the next-generation Mercedes Gelaendewagen.

No-shows this year include the 500-hp, twin-supercharged Aston Martin Virage Vantage, the ultra-performance version of the Virage hardtop coupe. Aston, saying the car won't be ready, has promised another Geneva surprise.

In addition, the new Seat Toledo sedan apparently won't bow until the Barcelona show in May.

For Americans who have not been to Europe since last fall's Paris show, Geneva also will provide the first glimpse of such newcomers as the BMW 3 series, Audi 100 and the Citroen ZX.

Major proposals in energy plan

Here are the major automotive-related proposals in President Bush's energy plan:

- Eliminate the 1.2-mpg cap on corporate average fuel economy credits for vehicles that run on gasoline or alternative fuels.
- Require the use of alternative-fueled vehicles in commercial fleets.
- Remove 2 million "old and inefficient" cars from the road by 2000 by offering a "bounty" to the private sector and to state and local governments. "Early retirement of these gas-guzzling vehicles could lead to savings of 10,000 to 15,000 barrels of oil a day" and reduce smog-causing emissions by 1 to 2 percent, the plan said.
- Invest $150 million between 1992 and 1996 in research programs with the auto industry to accelerate electric vehicle development.
- Increase federal purchases of alternative-fueled cars. The federal government buys 44,000 light-duty vehicles each year and operates 200,000 cars and light trucks. Specific numbers were not recommended.
- Promote research with the intent of installing intelligent vehicle and highway systems. The systems are expected to save fuel by reducing traffic jams.
- Accelerate research to develop transportation fuels from materials such as grains.
- Institute broad-scale reform of natural gas regulations to permit clean burning natural gas to replace oil as a transportation fuel.
- Expand the use of "high-occupancy vehicle" lanes, ridesharing and mass transit to reduce energy use and emissions.

— Diana T. Kurylko

ENERGY

FROM PAGE 1

Committee. But Watkins held to the administration's position that the issue of safety and technical feasibility must first be studied. He voiced opposition to Sen. Richard Bryan's, D-Nev., CAFE bill, calling it the "highway death act of 1991." The administration believes cars would have to become smaller — and less safe — to meet Bryan's call for a 40 percent increase in CAFE by model year 2001.

Taking a position automakers echoed in CAFE hearings the same day, Watkins recommended the issue be decided after the National Academy of Sciences issues a report on CAFE in late June.

"Higher CAFE encourages people to drive farther. Unless you restrict the miles they drive, CAFE won't make a difference," Watkins said, disputing Senate committee claims that fuel economy laws could save as much as 2.8 million barrels of oil a day.

The president's plan not only ignores CAFE but offers tantalizing relief from the current standard by eliminating a cap on credits for alternative-fueled cars.

The plan also opens the door for future consideration of "providing credit trading and averaging among manufacturers, eliminating distinctions between import and domestic vehicles that can adversely affect full-line manufacturers, revising noncompliance penalties and establishing alternative forms of CAFE standards."

The administration said standards could be based on vehicle size to improve fuel economy "without compromising highway safety" — an argument widely used by the auto industry to combat CAFE bills.

The energy plan isn't all good news for the industry. It renews an alternative fuels proposal similar to one in Bush's clean air bill that the industry successfully lobbied against last year.

The energy strategy proposes requiring centrally fueled fleets to purchase vehicles capable of using alternative fuels, such as compressed natural gas, ethanol and methanol. No numbers have been set, but the industry is already worried. The provisions would be stricter than those already mandated by the 1990 Clean Air Act.

General Motors said it hoped to work with the administration on developing the alternative-fuels program. Ford Motor Co. said it opposes requiring alternative-fuel initiatives by law "or a directive that fails to take into consideration the forces of the marketplace."

PRODUCTION

U.S. CAR

	Week Ended Feb. 23, 1991	Week Ended Feb. 16, 1991	Feb. to Date	Jan. 1 to Feb. 23, 1991	Jan. 1 to Feb. 24, 1990
Horizon	0	0	0	0	4,578
Sundance	0	0	2,813	4,595	8,927
Acclaim	0	0	2,971	13,777	9,875
Total Plymouth	**0**	**0**	**5,785**	**18,372**	**23,380**
LeBaron A	0	0	0	0	1,744
LeBaron J	1,700	0	2,034	4,390	1,567
N. Yorker C-Class	200	0	476	1,755	2,495
Fifth Avenue	700	0	1,547	5,033	3,389
Imperial	200	0	434	1,469	2,688
Total Chrysler	**2,800**	**0**	**4,491**	**12,647**	**11,883**
Omni	0	0	0	0	4,308
Daytona	500	0	616	1,575	1,029
Shadow	0	0	2,936	4,986	10,745
Dynasty	3,800	0	8,399	23,367	14,585
Spirit	0	0	2,920	12,705	11,901
Total Dodge	**4,300**	**0**	**14,871**	**42,633**	**42,568**
CHRYSLER CORP.	**7,100**	**0**	**25,148**	**73,652**	**77,831**
Escort	5,767	0	11,046	23,944	17,045
Mustang	3,434	0	3,946	8,186	21,286
Tempo	3,237	0	6,569	13,735	15,812
Taurus	7,275	3,688	16,417	39,445	57,997
Thunderbird	3,805	0	4,494	8,593	13,339
Total Ford Div.	**23,518**	**3,688**	**42,473**	**93,903**	**125,479**
Topaz	1,163	0	2,236	5,198	5,282
Cougar	1,622	0	2,047	5,780	7,067
Sable	3,205	1,167	6,208	12,338	12,283
Total Mercury	**5,990**	**1,167**	**10,492**	**23,316**	**24,532**
Continental	1,187	1,170	3,775	8,836	8,211
Mark VII	200	207	660	1,546	4,053
Town Car	2,773	2,753	8,864	20,792	24,657
Total Lincoln	**4,160**	**4,130**	**13,299**	**31,174**	**36,921**
Total L-M Div.	**10,150**	**5,297**	**23,790**	**54,490**	**61,553**
FORD MOTOR CO.	**33,668**	**8,985**	**66,263**	**148,393**	**187,032**
Skylark/Somerset	2,410	2,442	7,847	18,472	10,743
Century	2,630	2,635	7,379	10,595	9,169
Riviera	343	346	1,077	1,837	2,971
Electra/Park Ave.	2,314	2,897	8,505	17,715	12,035
LeSabre (fwd)	3,994	3,968	12,756	29,469	20,122
Roadmaster**	40	40	80	319	808
Reatta	64	32	137	170	1,115
Total Buick	**11,795**	**12,360**	**37,829**	**78,577**	**56,963**
Eldorado	457	434	1,416	2,348	2,503
Seville	823	808	2,563	4,451	3,483
Brougham (rwd)	0	0	449	2,482	4,991
DeVille (fwd)	3,250	2,903	9,709	22,618	19,382
Allante	64	64	205	474	437
Total Cadillac	**4,594**	**4,209**	**14,342**	**32,373**	**30,796**
Cavalier	5,295	6,017	17,731	40,969	34,864
Camaro	0	0	0	4,029	903
Corsica/Beretta	4,000	2,170	9,628	29,342	40,413
Caprice	1,128	1,094	5,619	17,623	15,325
Corvette	485	473	1,536	3,550	2,800
Total Chevrolet	**10,908**	**9,754**	**34,513**	**95,513**	**93,402**
Calais	2,342	1,929	6,505	14,063	10,016
Cutlass Ciera	1,313	1,365	4,374	7,707	10,718
Cutlass Supreme	2,110	2,137	6,885	15,733	10,934
Toronado	201	204	624	1,954	3,165
88 (fwd)	1,801	1,987	6,101	13,864	11,542
88 (rwd)	0	0	0	0	599
98	2,000	1,964	6,194	13,905	7,248
Total Oldsmobile	**9,767**	**9,586**	**30,682**	**66,326**	**54,222**
Sunbird	2,495	2,829	8,305	18,313	14,259
Grand Am	4,800	4,741	15,223	27,717	18,786
Firebird	0	0	0	1,003	540
Grand Prix	2,720	0	3,354	11,543	10,080
Pontiac 6000	1,000	1,029	3,036	5,283	7,360
Bonneville	2,226	1,440	5,236	9,261	13,621
Total Pontiac	**13,241**	**10,039**	**35,155**	**73,120**	**64,106**
Total Saturn*	**910**	**910**	**2,911**	**5,955**	**0**
GENERAL MOTORS	**51,215**	**46,858**	**155,432**	**351,864**	**300,932**
DIAMOND-STAR	**3,165**	**3,146**	**10,103**	**23,627**	**20,719**
Civic	1,995	1,398	5,584	12,845	19,966
Accord	7,275	5,403	21,590	52,481	47,291
HONDA	**9,270**	**6,801**	**27,174**	**65,326**	**67,257**
MAZDA†	**3,764**	**3,986**	**10,972**	**22,748**	**26,144**
NISSAN	**2,890**	**2,851**	**9,198**	**22,702**	**18,195**
Corolla	2,100	2,107	6,721	15,700	15,772
Geo Prizm/Nova	2,100	2,125	6,725	15,827	14,922
NUMMI	**4,200**	**4,232**	**13,446**	**31,527**	**30,694**
SUBARU-ISUZU	**1,184**	**1,147**	**3,800**	**8,834**	**4,480**
TOYOTA	**4,400**	**4,356**	**13,918**	**33,725**	**33,773**
TOTAL BIG 3	**91,983**	**55,843**	**246,841**	**573,999**	**565,795**
TOTAL TRANSPLANT	**28,873**	**25,619**	**88,611**	**298,489**	**201,262**
TOTAL CARS, U.S.	**120,856**	**81,462**	**335,452**	**782,398**	**767,057**
TOTAL CARS, CANADA	**15,512**	**14,926**	**48,245**	**129,314**	**130,980**
U.S., CANADA CARS	**136,368**	**96,388**	**383,697**	**911,712**	**898,037**
U.S., CANADA CARS AND TRUCKS	**213,800**	**158,433**	**590,755**	**1,441,359**	**1,542,375**

Monthly estimates may contain error of one or two units due to rounding.
*Estimate †Total includes MX-6, 626, and Ford Probe
**1990 totals reflect the LeSabre (rwd).

CANADIAN CAR

	Week Ended Feb. 23, 1991	Week Ended Feb. 16, 1991	Feb. to Date	Jan. 1 to Feb. 23, 1991	Jan. 1 to Feb. 24, 1990
Monaco	0	329	329	329	1,894
Premier	0	954	954	954	401
CHRYSLER CORP.	**0**	**1,283**	**1,283**	**1,283**	**2,295**
Tempo	3,428	3,049	9,919	15,292	17,769
Topaz	859	746	2,492	4,130	4,774
Crown Victoria	3,344	2,628	8,793	13,263	14,544
Grand Marquis	757	130	968	968	13,908
FORD MOTOR CO.	**8,388**	**6,553**	**22,172**	**33,653**	**50,995**
Celebrity	0	0	0	0	2,559
Cutlass Ciera	0	0	359	7,877	14,606
Lumina	0	0	936	19,073	26,608
Regal	0	0	667	13,135	3,816
GENERAL MOTORS	**0**	**0**	**1,961**	**40,085**	**47,589**
CAMI	**2,500**	**2,548**	**8,088**	**19,595**	**0**
HONDA	**2,140**	**2,195**	**6,948**	**16,288**	**17,715**
HYUNDAI	**1,000**	**832**	**2,961**	**6,865**	**2,510**
TOYOTA	**1,340**	**1,335**	**4,291**	**10,232**	**8,474**
VOLVO	**144**	**180**	**540**	**1,313**	**1,402**
TOTAL CARS, CANADA	**15,512**	**14,926**	**48,245**	**129,314**	**130,980**

U.S. TRUCK

Caravan	1,900	2,017	6,430	15,625	18,895
Dakota	0	1,920	3,772	6,881	7,695
Caravan C/V	50	118	252	524	1,170
Ram pickups	0	1,934	3,766	6,893	10,588
Total Dodge	**1,950**	**5,989**	**14,220**	**29,923**	**38,348**
Cherokee	3,900	0	4,689	10,587	22,238
Comanche	200	0	263	757	999
Grand Wagoneer	0	0	0	0	585
Wagoneer/Briarwood	150	0	174	352	393
Total Jeep	**4,250**	**0**	**5,126**	**11,696**	**24,215**
Voyager	1,500	1,488	4,683	11,838	17,324
Town & Country	50	57	186	436	556
Total C-P Div.	**1,550**	**1,545**	**4,868**	**12,274**	**17,880**
CHRYSLER CORP.	**7,750**	**7,534**	**24,215**	**53,893**	**80,443**
Aerostar	3,974	0	7,964	17,581	286
Bronco	617	0	768	1,943	23,160
Bronco II/Explorer	5,793	5,436	17,654	38,848	7,899
Navajo	399	334	1,216	2,880	14,596
Econoline	0	3,283	4,023	11,822	23,350
Mediums/Heavies	939	1,060	2,225	5,840	16,673
Light trucks	9,035	0	13,326	32,045	60,964
Ranger	6,238	3,422	13,178	33,083	39,059
Total Ford Div.	**26,995**	**13,535**	**60,354**	**144,042**	**186,007**
FORD MOTOR CO.	**26,995**	**13,535**	**60,354**	**144,042**	**186,007**
Astro	2,268	1,864	5,053	10,931	11,106
Blazer	208	220	677	1,180	2,036
Lumina APV	0	0	294	3,854	14,438
Mediums/Heavies	152	140	585	1,570	2,379
P-Model	450	439	1,306	1,937	3,362
Pickups	5,760	2,519	9,753	26,444	40,576
S-10	5,578	4,701	11,185	33,386	34,918
S-10 Blazer	1,479	1,257	2,829	6,259	12,456
Sportsvan/Van	995	893	2,555	3,984	4,766
Suburban	550	482	1,628	3,353	7,471
Total Chevrolet	**17,440**	**12,515**	**35,864**	**92,898**	**133,505**
Jimmy	73	56	210	405	761
Mediums/Heavies	560	436	1,399	2,849	2,713
P-Model	60	60	202	411	363
Pickups	2,837	1,300	4,779	10,621	10,683
S-15/Sonoma	1,751	950	2,820	8,271	8,733
S-15 Jimmy	561	482	1,095	3,010	4,339
Safari	980	723	2,311	4,814	3,708
Suburban	574	624	1,923	3,026	3,540
Vandura/Rally Vans	365	452	1,395	1,926	2,308
Total GMC	**7,761**	**5,083**	**16,134**	**35,333**	**37,148**
Silhouette	0	0	96	1,110	4,626
Bravada	630	638	1,378	3,382	0
Total Oldsmobile	**630**	**638**	**1,474**	**4,492**	**4,626**
Pontiac Trans Sport	**0**	**0**	**151**	**2,058**	**9,220**
GENERAL MOTORS	**25,831**	**18,236**	**53,624**	**134,781**	**184,499**
NAVISTAR*	**1,550**	**1,600**	**5,097**	**11,026**	**11,723**
NISSAN	**2,770**	**2,736**	**8,822**	**21,712**	**23,426**
SUBARU-ISUZU	**1,176**	**1,102**	**3,692**	**8,640**	**4,480**
AM GENERAL	**400**	**400**	**1,200**	**3,250**	**3,600**
MISCELLANEOUS	**2,650**	**2,650**	**8,480**	**21,550**	**24,000**
TOTAL TRUCKS, U.S.	**69,122**	**47,793**	**165,563**	**398,994**	**518,178**

CANADIAN TRUCK

Caravan	0	2,949	6,434	19,006	25,779
Caravan C/V	0	84	187	566	1,623
Ram Wagon	715	0	1,515	1,934	2,926
Ram Van	1,205	0	2,711	3,674	6,934
Total Dodge	**1,920**	**3,033**	**10,847**	**25,180**	**37,262**
Wrangler	0	2,058	4,674	14,197	21,482
Total Plymouth	**0**	**2,058**	**4,674**	**14,197**	**21,482**
Wrangler	0	0	1,937	5,738	3,040
Total Jeep	**0**	**0**	**1,937**	**5,738**	**3,040**
CHRYSLER CORP.	**1,920**	**5,091**	**17,458**	**45,115**	**61,784**
FORD MTR (lt. trks.)	**0**	**2,976**	**3,555**	**10,435**	**19,673**
Light trucks	3,280	2,836	9,996	23,448	25,836
Vans	640	522	1,824	2,919	3,819
Total Chevrolet	**3,920**	**3,358**	**11,820**	**26,367**	**29,655**
Light trucks	970	1,141	3,401	8,383	11,868
Vans	285	461	1,287	1,895	1,615
Total GMC	**1,255**	**1,602**	**4,687**	**10,278**	**13,483**
GENERAL MOTORS	**5,175**	**4,960**	**16,507**	**36,645**	**43,138**
CAMI	**1,050**	**1,059**	**3,446**	**8,397**	**0**
NAVISTAR*	**165**	**166**	**529**	**1,161**	**1,565**
TOTAL TRKS., CANADA	**8,310**	**14,252**	**41,495**	**101,753**	**126,160**
U.S., CANADA TRKS.	**77,432**	**62,045**	**207,059**	**500,647**	**644,338**

Miscellaneous includes estimates for Mack, Volvo-White, Kenworth, Peterbilt, Freightliner, Mercedes-Benz.

Outlook dims after upturn

By Anne E. Wright
AUTOMOTIVE NEWS CHIEF STATISTICIAN

U.S. manufacturers expect to idle 17 plants and one car line in the United States and Canada this week, resulting in an estimated loss of 56,985 cars and trucks.

Last week's U.S. estimated vehicle production was the highest since Dec. 15, 1990.

Makers slated 120,856 cars last week, 48.36 above the prior week but 12.48 percent below 1990.

Year-to-date U.S. auto production is up 2.0 percent over 1990.

Truckmakers planned to build 69,122 units last week, 44.63 percent above the prior week but 15.94 percent below 1990.

So far this year, truck production trails 1990 by 23.02 percent.

General Motors began producing the Buick Roadmaster wagon at the Willow Run, Mich., facility. GM does not report vehicle production until the line is at full speed, therefore the figures reflected in the table are estimated.

A snowstorm forced Honda of America Manufacturing Inc. to idle its two Ohio plants Ohio Feb. 15.

Ford Motor Co. has reduced the Edison, N.J., truck plant and the truck line of the Lorain, Ohio, facility to single shifts this week.

CANADA: Total vehicle production in Canada was estimated at 23,822 units last week, 18.36 below the prior week and 45.45 percent below the year-ago week.

SCHEDULED PLANT CLOSINGS

Plant	Weeks down	Units lost/ week
FORD		
Chicago	**2/25**	**5,200**
Ford Taurus		
Mercury Sable		
Dearborn, Mich.	**2/25, 3/4**	
Ford Mustang		3,700
Kansas City, Mo.	**2/25**	
Ford F series		3,000
Kentucky Truck	**2/25**	
Ford medium, heavy and extra-heavy trucks		1,000
Lorain, Ohio	**2/25**	**5,600**
Ford Thunderbird		
Mercury Cougar		
Michigan Truck	**2/25, 3/4**	**3,000**
Ford Bronco		
Ford F series		
Norfolk, Va.	**2/25**	
Ford F series		3,200
St. Louis	**2/25**	
Ford Aerostar minivans		4,000
St. Paul, Minn.	**2/25**	**3,600**
Ford Rangers		
Ford F series		
Wayne, Mich.	**2/25**	
Ford Escort		5,800
GENERAL MOTORS		
Doraville, Ga.	**2/25**	
Olds. Cutlass Supreme		2,100
Linden, N.J.	**2/25, 3/4**	
Chevrolet Corsica/Beretta		2,060
Oklahoma City	**2/25**	
Pontiac 6000		1,100
Buick Century		2,200
Olds. Cutlass Ciera		1,700
Ste. Therese, Quebec	**2/25**	
Olds. Cutlass Ciera		1,780
Scarborough, Ontario	**2/25**	
Full-sized Chevy and GMC vans		1,000
CHRYSLER		
Bramalea, Ontario	**2/25**	
Eagle Premier		875
Dodge Monaco		400
St. Louis (No. 1)	**2/25, 3/4**	
Chrysler LeBaron		1,500
Dodge Daytona		660
Warren, Mich.	**2/25**	
Dodge pickups		3,510
Total units lost week of 2/25		**56,985**
Total units lost week of 3/4		**10,920**

Source: Automotive News Data Center

NOTE

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